

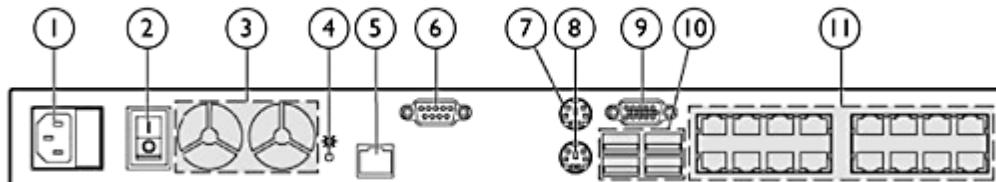
### Overview

HP's IP Console Switch with Virtual Media is a key component in managing the heterogeneous data center and along with the IP Viewer software allows remote access to multiple servers running various operating systems. Virtual Media capability allows a removable drive or ISO image to be remotely mapped to an attached server in the data center or a remote office for software installations and upgrades. An intuitive On-Screen Display (OSD) provides menus for configuration, virtual media, display, and even security and upgrades from the local console.

In cascaded environments the HP IP Console Switch with Virtual Media can allow an administrator to manage up to 4096 servers across three tiers from a single console. When tiered with additional HP Server Console Switches with Virtual Media application installations and upgrades can be pushed through to any server on any of the three tiers from a single console.

The HP IP Console Switch with Virtual Media is backwards compatible with all HP Cat5 based Server Console Switches and interface adapters that do not support virtual media.

Standard rack mounting of the HP IP Console Switches will take up 1U (1.75") of front panel rack space. However, the switches can also be mounted in a "zero U" profile by mounting in the side rails of the rack, or behind the HP 1U Rackmount Keyboard or the 1U TFT7600 Rackmount Keyboard Monitor.



1. AC power connection
2. Power switch
3. Fans
4. Power and status LED
5. RJ-45 network connection
6. Serial port
7. PS/2 mouse connection
8. PS/2 keyboard connection
9. VGA monitor connection
10. USB ports
11. Server ports

### At A Glance

### Overview

- Increased user counts:
  - More users per switch increases flexibility
- Improved video support:
  - New video compression allows 1024x768 and 16-bit color for remote sessions without impacting performance
  - Increases cable distances at higher resolutions
- Improved security:
  - Keyboard, video, mouse and virtual media activity is fully encrypted using 128-bit SSL, DES, or DES3 for remote sessions
  - Remote console sessions to the data center can be shared by other remote users. Stealth mode can also be used by administrators to monitor remote sessions without announcing it for security reasons
- LDAP included:
  - Microsoft Active Directory integration using LDAP is standard
  - Local security database on switch is also available for non LDAP implementations
- Remote and local virtual media:
  - Administrators can map local media on a workstation to a remote server in the data center or remote office to easily perform application installations or upgrades
  - A USB CD-ROM, USB DVD, USB floppy drive, USB hard drive or USB key can be attached directly to the HP IP Console Switch with Virtual Media and mapped to an attached server
  - When used locally with the HP 1U Rackmount Keyboard with USB or the HP TFT7600 RKM USB drives can be connected to the front USB port on the keyboard for increased ease of use
  - Virtual media support requires the use of Virtual Media Interface Adapters
- Virtual media interface adapter:
  - New interface adapter to support virtual media on ProLiant servers
  - Virtual Media Interface Adapters support USB 2.0 protocol and speed
  - Supports KVM functionality also
- Improved tiering support:
  - Three levels of cascading are available to support up to 4096 servers. When all tiers are comprised of virtual media compatible console switches and interface adapters, virtual media can be mapped to a server on any tier
- IP Viewer 3.0 software:
  - Supports HP IP Console Switches with Virtual Media, HP Serial Console Servers, and legacy Cat5 based HP IP Console Switches
  - Supports remote virtual media sessions
  - Compatible with Windows and Linux clients
  - No software to install on target servers

### What's New

- USB Virtual Media Interface Adapter for servers that do not have PS/2 mouse and keyboard connections

### Models

HP IP Console Switch	2x1x16 IP Console Switch with Virtual Media	AF601A
	4x1x16 IP Console Switch with Virtual Media	AF602A

### Product Features

### Target Applications and Markets

Network Administrators, System Administrators, Engineering Managers, Chief Information Officers, and Managers of Information Systems are all among the users who will see benefits from using the HP family of console switches.

- **24/7 data centers** - The HP IP Console Switch enables staffed data centers to move people out of computer rooms while still maintaining server accessibility. Technicians can load the IP Viewer software on their local workstation at a desk or cubicle and access the servers in the computer room through a LAN/WAN connection.
- **Staffed remote sites** - The HP IP Console Switch provides users with access to local KVM functions over their LAN or WAN. Remote users can access servers and perform actions as if they are standing at a local console.
- **Heterogeneous environments** - The HP IP Console Switch connects to any type of server that has a standard PS/2 or USB KVM connection and will also connect to BladeSystems and serial devices.

### Features

- The **4x1x16 model** will support up to 4 users as either 4 remote users or 3 remote users and 1 local user. The 2x1x16 model will support 3 users simultaneously as 2 remote users and 1 local user.
- **Full remote KVM functionality** - Remote KVM control of servers and serially attached devices at near local performance.
- **Remote virtual media** - Easily load and update software and firmware from anywhere on the LAN or WAN when used with Virtual Media Interface Adapters.
- **iLO compatibility** - Easily switch between remote KVM and iLO sessions directly from the IP Viewer software.
- **On-Screen Display (OSD)** - Displays system-related information on the console monitor, such as selected server name, status, power-up test data, configuration menus and virtual media.
- **Programmable Scanning** - An evaluation of system performance can be made by sequentially scanning any or all of the computers in the system. Programmable scanning allows you to determine which computers to include as well as the duration of the connection.
- **Configuration NVRAM** - NVRAM (non-volatile RAM) makes it easy to set configuration information using commands entered from the keyboard. The NVRAM stores the resulting configuration until a user decision is made to change the information, even if the unit loses power.
- **Password Protection** - For protection against unauthorized users, the switch box provides a local password option for security purposes as well as individual user authentication and access rights for remote users.
- **Switch Firmware Update** - The application code of the switch can be quickly and easily updated via FLASH ROM. Updates can be accomplished remotely over the LAN using the IP Viewer 3.0 software.
- **Multiple Space Saving 0U Installation Methods** -
  - Side Mount - Rails are provided for mounting the unit to the side of rack cabinets with side mounting capability.
  - Rear Rack Mount - HP Console Switches may be mounted behind a HP 1U Rackmount Keyboard, or the TFT7600 rack mounted keyboard and monitor with slide rails provided with the switch.
- **PS2 Virtual Media Interface Adapter support servers with PS2 mouse and keyboard connection and a USB port for virtual media.**
- **USB Virtual Media Interface Adapter supports servers without PS2 mouse and keyboard connections.**
  - USB 2.0 protocol and speed supported on both Virtual Media Interface Adapters
- **Support for a variety of server connections with Interface Adapters where virtual media is not needed.**
  - PS/2
  - USB mouse and keyboard
  - Serial Console Support
  - BladeSystems support via front diagnostics connector
- **The following input devices provide a convenient front USB pass through port for connecting USB media locally to the HP IP Console Switch with Virtual Media.**
  - HP 1U Rackmount Keyboard with USB
  - HP TFT7600 Rackmount Keyboard Monitor

**NOTE:** For more information please visit: <http://www.hp.com/go/kvm>.

### Product Features

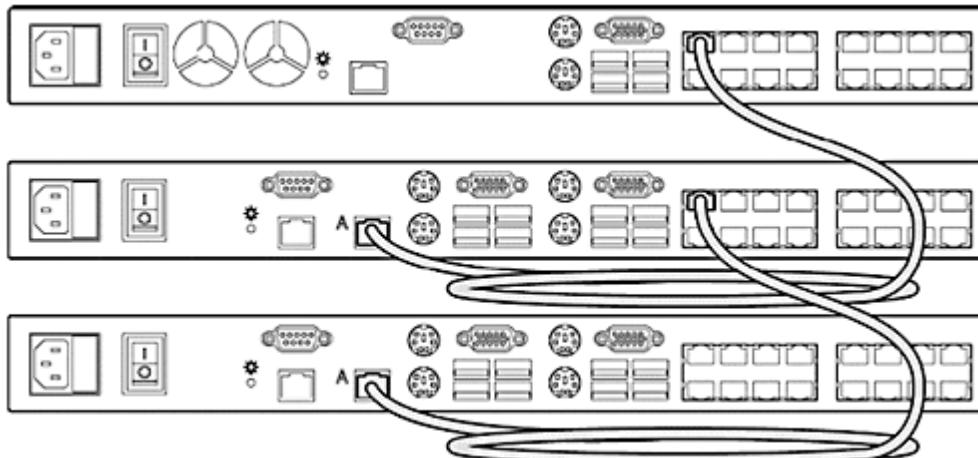
#### Cascaded Configurations

Cascading, also called tiering, is the ability to connect one or more switches under a single switch at the top as in a pyramid. Cascading allows an administrator to access larger numbers of servers from a single local or remote console. The HP IP Console Switch with Virtual Media will support up to 3 levels of tiering under certain conditions

- HP IP Console Switches are only supported at the top tier of a cascaded configuration.
- HP IP Console Switches with Virtual Media may be cascaded to HP Server Console Switches with Virtual Media or any Cat5 based HP Server Console Switches by connecting a Cat5 cable from a server port on the top switch to the dedicated tiering port on the switch below. Interface adapters are not needed to cascade HP Server Console Switches.
- HP IP Console Switches with Virtual Media should be placed at the top and tiered to up to 16 Server Console Switches with Virtual Media or any Cat5 based HP Server Console Switch for a maximum of 256 servers in the cascade.
- If the first and second tiers contain HP Console Switches with Virtual Media then a third level may be added comprised of either HP Server Console Switches with Virtual Media or any Cat5 based HP Server Console Switches for a maximum of 4096 servers in the cascade.
- Virtual media can be mapped to servers on any tier but only if the server is connected to a HP Server Console Switch with Virtual Media using a Virtual Media Interface Adapter. Virtual media operation requires a Virtual Media Interface Adapter connected to a HP Console Switch with Virtual Media.
- An HP IP Console Switch with Virtual Media can not be cascaded under a legacy Cat5 based HP Server Console Switch.
- Legacy Cat5 based HP Server Console Switches, Interface Adapters, and Expansion Modules do not support virtual media.
- To perform a firmware upgrade for a cascaded HP Server Console Switch and all attached Interface Adapters; you must locally connect the keyboard, monitor, and mouse to the cascaded HP KVM Server Console Switch to access the local OSD.
- HP IP Console Switches do not support Compaq KVM PCI Cards or HP legacy console switches.

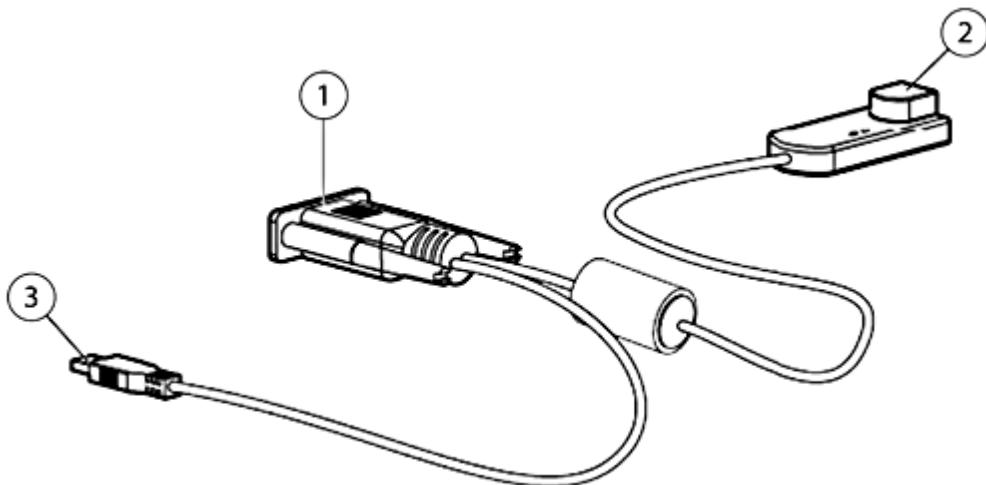
NOTE: For more information on cascading HP IP Console Switches please visit: <http://www.hp.com/go/kvm>.

#### Cascading HP Console Switches with Virtual Media using the designated tiering port



USB Virtual Media Interface Adapter (PN: AF603A)

### Product Features

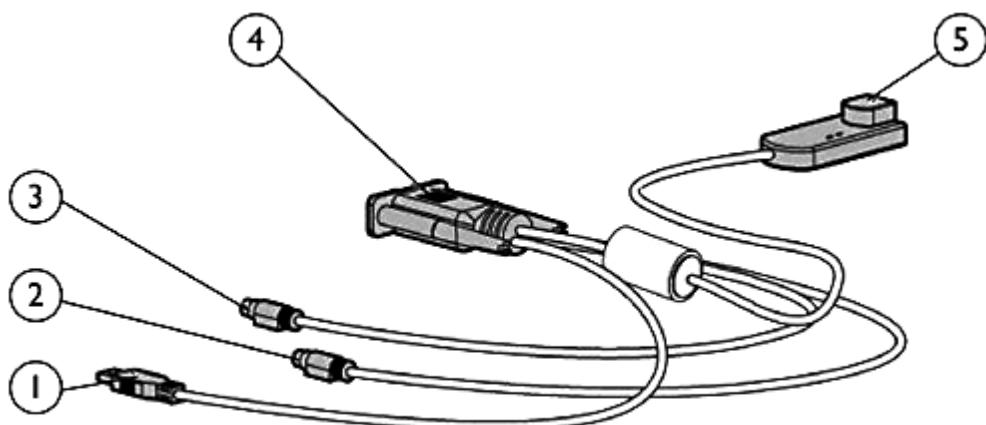


1. SVGA connection

2. RJ-45 connection to switch

3. USB 2.0 connection for mouse, keyboard, and virtual media

Virtual Media Interface Adapter (PN: AF604A)



1. USB connection for virtual media

2. PS2 keyboard connection

3. PS2 mouse connection

4. VGA connection

5. RJ-45 connection to switch

### HP Server Support

#### KVM Support

##### HP ProLiant Server Support

All HP ProLiant servers running any operating system are supported on all HP IP Console Switches.

#### HP Integrity Server Support

Integrity Server support is dependent on operating system and hardware configurations. For systems capable of displaying VGA graphics the USB Interface Adapter (PN: 336047-B21) may be used. Some Integrity Servers may require an optional graphics adapter.

With some operating systems the Serial Interface Adapter (PN: 373035-B21) may be connected to the RS-232 management port to provide VT100 terminal emulation through the HP IP Console Switch.

#### HP Unix Server Support

HP9000 Servers can be managed using the Serial Interface Adapter (PN: 373035-B21) connected to the RS-232 management port to provide VT100 terminal emulation through the HP IP Console Switch.

**NOTE:** For additional information on supported options for the HP Integrity and HP9000 Servers please consult the HP9000, Integrity and carrier-grade servers Configuration Guide.

HP Serial Console Servers may also be used to support serially managed servers and devices.

#### KVM Support with virtual media (requires Virtual Media Interface Adapter)

##### HP ProLiant Server Support

All HP ProLiant servers capable of supporting USB storage devices and USB drive keys and running Microsoft Windows 2000 (SP4 or later) or later, RedHat 4, or SLES 9 are supported. Requires Virtual Media Interface Adapter (PN: AF603A or AF604A) connected to a HP Console Switch with Virtual Media.

**NOTE:** Some hardware configurations and/or operating systems may only transfer virtual media at USB 1.1 speeds.

**NOTE:** Please see the following URL for additional information regarding USB support:

<http://h18004.www1.hp.com/products/servers/platforms/usb-support.html>

### Service and Support, HP Care Pack, and Warranty Information

Three-year limited warranty, including hardware diagnostic support, pre-failure warranty (coverage of hard drives, memory and processors). The warranty is fully supported by HP Services and a worldwide network of resellers and service providers. In addition 90-day's getting started software telephone support may be covered under the warranty or available for an additional fee. Enhancements to warranty services are available through HP Care Pack services.

**NOTE:** Limited warranty is 3 year parts only.

Care Pack services provide a range of life cycle support options that let you choose the service levels that meet your business requirements, from basic to mission-critical.

A full range of HP Care Pack hardware and software services are available including:

- Installation and start up
- Education courses
- Extended onsite hardware coverage hours from same business day 13 hours, 5 day to 24 hours, 7 days call window with options including 4-hour response or 6-hour Call To Repair
- Comprehensive range of software technical support for Microsoft, Linux, ProLiant Essentials and VMWare-based IT solutions helping to deliver high level of application availability. Response times range from 30 mins for critical problems to 2 hours.
- System Management, Performance Services and Mission Critical Support Solution

HP Care Pack Services include HP branded hardware options qualified for the server, purchased at the same time or afterwards, internal to the enclosure, as well as 22" and smaller external monitors and tower UPS options up to 3KVA. 22" and smaller external monitors will be covered at the same service level and coverage period as the server. For servers or storage systems installed within a rack, service also covers all HP qualified rack options installed within the same rack.

**NOTE:** For more information on HP Care Pack services, contact any of our worldwide sales offices or resellers or visit our worldwide Web site on the internet at: <http://www.hp.com/hps/carepack>

**NOTE:** For more complete information on HP Services offerings, customers and resellers, please visit us at: <http://www.hp.com/hps>

**NOTE:** Additional information regarding worldwide limited warranty and technical support is available at: <http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html>

### Related Options

<b>Interface Adapters for Virtual Media</b>	USB Virtual Media Interface Adapter	AF603A
	PS/2 Virtual Media Interface Adapter, 1 pack	AF604A
<b>NOTE:</b> Requires PS/2 mouse and keyboard connections and one USB port on server.		
<b>Interface Adapters</b> (support KVM functionality only)	PS/2 Interface Adapter - 1 pack	262588-B21
	PS/2 Interface Adapter - 8 pack	262587-B21
	USB Interface Adapter - 1 pack	336047-B21
	BladeSystem CAT5 KVM Interface Adapter - 1 pack	AF100A
<b>NOTE:</b> Supports HP BladeSystems p-Class products only.		
	Serial Interface adapter - 1 Pack with power supply	373035-B21
<b>NOTE:</b> VT100 terminal emulation.		
<b>CAT5e Cables</b>	CAT5e Cable 3', 4 pack	263474-B21
	CAT5e Cable 6', 8 pack	263474-B22
	CAT5e Cable 12', 8 pack	263474-B23
	CAT5e Cable 20', 4 pack	263474-B24
	CAT5e Cable 40', 1 pack	263474-B25
<b>Service &amp; Support (Care Pack)</b>	Hardware Installation (Electronic)	U2871E

### Technical Specifications

HP IP Console Switch with Dimensions	Height	1.72 in (4.36 cm)
Virtual Media	Width	17 in (43.8 cm)
	Depth	11.03 in (28.02 cm)
	Weight	7.25 lb (3.29 kg)
Power Requirements	Rated Voltage	100 to 240V AC
	Rated Frequency	50 to 60 Hz
	Rated Input Current	0.5 to 0.25A
	Input Power	100W (max)
	Heat	340 BTU/hr (max)
Temperature Range	Maximum Ambient Operating Temperature	50° to 122° F (10° to 50° C)
	Ambient Storage and Shipping Temperature	86° to 140° F (30° to 60° C)
Temperature	Operating	50° to 122° F (10° to 50° C)
	Transit	-22° to 140° F (-30° to 60° C)
	Storage	-4° to 140° F (-20° to 60° C)
Relative Humidity (non-condensing)	Operating	20% to 80%
	Non-operating	5% to 90%
Video Modes Supported	VGA, SVGA, XGA	
Network Speed	10/100/1000 Mb/s	

### CAT 5 Cable lengths and Video Resolution Restrictions

	1280 x 1024	1024 x 768	800 x 600
75 ft (22m) cable length	Y	Y	Y
100 ft (30m) cable length	-	-	Y

© Copyright 2006 Hewlett-Packard Development Company, L.P.

The information contained herein is subject to change without notice.

The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.